

# How to network three core switches

## Article Overview

The most efficient way to network three core switches is to use a triangular topology with link aggregation and Layer 3 routing for redundancy and high performance.

## Topology and Interconnection

For three core switches, a triangle (full mesh) topology is recommended. Each switch connects to the other two, forming a loop. This ensures redundancy--if one link fails, traffic can still flow through the remaining links. To prevent broadcast storms, Spanning Tree Protocol (STP) should be enabled and properly configured before completing the loop .

## Link Aggregation

To maximize bandwidth and reduce bottlenecks, configure Link Aggregation Groups (LAGs) or EtherChannel between each pair of switches. This bundles multiple physical ports into a single logical link, increasing throughput and providing failover if one port fails . Typically, 2-4 ports per uplink are sufficient, depending on traffic requirements.

## Layer 3 Configuration

If the switches are Layer 3 capable, configure SVIs (Switched Virtual Interfaces) for each VLAN on each switch. Use static routes or dynamic routing protocols (like OSPF or EIGRP) to allow inter-VLAN and inter-switch communication without forcing traffic through a single switch . This improves efficiency and ensures that if one core switch fails, the remaining switches can still route traffic.

## VLAN and Routing Considerations

- o Assign VLANs consistently across all switches.
- o Use the core switches as the default gateway for each VLAN.
- o If Layer 3 switches are deployed, configure redundant default gateways using VRRP or HSRP to maintain connectivity during a switch failure .
- o Ensure that routing tables are updated to reflect all inter-switch links.

## Optional Enhancements

- o Stacking: If supported, stack the switches to act as a single logical unit, simplifying management and improving failover.
- o Ether-Trunk or MAD (Multi-Active Detection): For Huawei or similar switches, configure Ether-Trunk

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interfaces and MAD to prevent split-brain scenarios .

o Monitoring and QoS: Implement monitoring and quality of service to prioritize critical traffic and detect link failures quickly. By combining a triangular topology, link aggregation, Layer 3 routing, and redundancy protocols, you can achieve a highly available, high-performance network for three core switches suitable for enterprise or campus environments .

Learn how to setup a network switch with ease. Switches allow you to send and receive information efficiently and securely. Get

Hello Everyone Thank you for taking the time to read my post. I have three GS752TP-200EUS Netgear switches and

There are different types of enterprise switches that perform various roles in these layer-based or hierarchical ethernet networks.

A network switch is a fundamental piece of any network, so it's critical that you as an IT professional understand the

A core switch is not merely a type of switch but rather denotes the switch that operates at the core layer (the network's

Get a closer look at core switches: the nerve centers of network infrastructure that enhance performance and facilitate

Explore the core switch's role as the backbone of your network. Discover key differences,

Layer2 and Layer3 switches are the foundation of any network. After all, any network devices (routers, firewalls, computers, servers

Hello everyone, In my campus network i have cisco 2960x as access switches and one cisco 3750 as core switch

In this discussion, let's break down three major network architectures--Two-Tier, Three-Tier, and Spine-Leaf--using simple

Cisco has a comprehensive portfolio of network switches and switching solutions for enterprise networks,

We'll have an overview of the Collapsed Core Design, on top of the Collapsed Core and the Three-tier Network Architectures

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Most importantly, any upgrades and advancements in networking technology can be easily accommodated by existing

So I have a network of about 150 devices that I am looking at optimizing. Current setup: Only one VLAN, although I

This tutorial provides an overview of the access, distribution, and core layers and explains

It is the backbone behind virtually every medium-to-large enterprise campus network in existence. What Is the Three

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